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BLAZING NATURE'S TRAIL

THE NATURE TRAILS AND TRAILSIDE MUSEUM
AT BEAR MOUNTAIN, N. Y.

WILLIAM H. CARR

Assistant Curator Department of Education



Department of Education
THE AMERICAN MUSEUM OF NATURAL HISTORY
77th Street and Central Park West
New York City

NEW SCHOOL SERVICE SERIES NUMBER THREE

1929

AMERICAN HISTORY
AMERICAN HISTORY





SLENDER BIRCHES

Birch trees, of different kinds, are numerous along the trails. They offer opportunities for telling inspirational as well as informational stories

Blazing Nature's Trail

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AT
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WILLIAM H. CARR

ASSISTANT CURATOR, DEPARTMENT OF PUBLIC EDUCATION



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BEAR MOUNTAIN TRAILSIDE MUSEUM BUILDING

FOREWORD

The Trailside Museum and the Nature Trails at Bear Mountain on the Hudson exerted an educational influence on more than 53,000 people during the summer of 1928. This project, conducted by the American Museum of Natural History in cooperation with the Commissioners of the Palisade Interstate Park "has confirmed its permanent value, not only as a center of outdoor education in the Park, but as an outstanding example of this form of instruction which is having an important influence in the national and international extension of its principles."

The work at Bear Mountain, though still experimental in many of its phases, is a culmination of other similar efforts made in the Park. Though unique in itself, the Trailside Museum reflects the earlier undertaking of Mr. B. T. B. Hyde, who established the first outdoor museum in the Park in the Kanohwahke Lake region in 1920, and of the later nature trail research station directed by Dr. Frank E. Lutz in 1925 on the western border of the Park near Tuxedo. The Trailside Museum at Bear Mountain was established in 1927 through the efforts of Dr. Hermon C. Bumpus, chairman of the committee on outdoor museums of the American Association of Museums. A grant of the Laura Spelman Rockefeller Foundation provided for the Trailside Museum building. The building is located in the center of the area set aside by the Commissioners of the Palisade Interstate Park for the educational venture.

Through the interest of Major William A. Welch, director of the Park, a cabin was built to provide living quarters for members of the staff of the Trailside Museum. This little bark-covered structure is near the Bear Mountain Bridge. It commands a splendid view of the Hudson.

The staff this year included William H. Carr, assistant curator of the Department of Education of the American Museum of Natural History and his wife, Marion B. Carr. Mr. Carr is naturalist in charge of the Bear Mountain Nature undertaking. John Y. Keur ably assisted in the work, as did Thomas Quinn of the American Museum. Volunteer workers, who lived in the workshop during various periods of the spring and summer, were of much assistance. Prentice B. Hill of the Department of Geology of the American Museum spent one month at Bear Mountain and was of great help in many ways. Joseph Quinn of the Department of Mineralogy of the Museum spent several week-ends at the trail center and also helped in the work. Collections of rocks and minerals were loaned through the courtesy of both Dr. Chester A. Reeds

and Dr. Herbert Whitlock of the American Museum Staff. Dr. Clyde Fisher visited the trails at various times and gave valuable advice as did Dr. George H. Sherwood. The continued interest and aid given by Major Welch were appreciated by all who were connected with the Bear Mountain development.

The Trailside Museum cooperated with the educational staff of the Park in circulating nature collections to various nature centers in the Park. These nature collections and lantern slides were loaned by the Department of Education of the American Museum of Natural History. They reached more than 10,000 children during July and August.

GEORGE H. SHERWOOD, Curator-in-Chief,
Department of Public Education,
American Museum of Natural History,
77th Street and Central Park West
New York City.

BLAZING NATURE'S TRAIL

WILLIAM H. CARR

Each year by train, boat, automobile and on foot, thousands of people come to visit the Bear Mountain section of the Palisade Interstate Park. Ninety thousand of them, mostly children, spend two weeks or more in the various camp units. The great majority, however, are those who temporarily escape from greater New York City to enjoy a day's release in the open. It is for these people that Nature Trails and the Trailside Museum were established in 1927. The purpose of this project is to develop intelligent enjoyment and interest in natural history generally, and to teach the principles of conservation, of "live and let live," in the out-of-doors where inspiration and explanation may go hand in hand.

Both from the standpoints of large attendance and of the character of the country, no more fitting a location could have been selected for this undertaking than Bear Mountain. The rugged beauty of the Hudson Highlands has been well known ever since Henry Hudson guided his sturdy little "Half Moon" up the broad reaches of the great river that bears his name. Historic and scenic interest are attached to every rounded mountain that rises above the valley floor to give that sense of permanence to the landscape that mountains are ever wont to do. The Trailside Museum stands overlooking the river, in the very heart of this region, at the gateway to the highlands.

The second season has seen the opening of the Trailside Museum and the development of new labeled trails that now extend for more than two miles throughout the area. The attendance numbered in excess of forty-two thousand persons during the six months of operation from May to October.

One of the main problems of this year was that of correlating the work in the museum with the work upon the trails. The Trailside Museum was the focus point of all the trails. From this center, all the paths radiated, only to return once more to the point from which they began. In order to have the building an integral part of the trail system, it was necessary from the start to make it as unlike a museum in the accepted sense of the word as was possible. In effect, the Trailside Museum at Bear Mountain is a museum without specimens. The building itself, constructed of worn glacial boulders, looks as though it were but a



Photograph by G. Clyde Fisher

THE BULLETIN BOARD

This large guiding sign, at the beginning of the trail, tells of current happenings along the trails. It tells what to look for and where to go. The aims and purposes of the Trailside Museum are also explained here. The visitor thus has a somewhat comprehensive idea of "what it is all about"

part of the ground upon which it stands. To preserve this sense of naturalness indoors as well as out, no conventional museum displays of any sort were used. No mounted animals stared at the visitor through uncomprehending glass eyes, and no lifeless insects, pin-pierced and stiff, awaited the ultimate destruction that would have come to them in so small a museum. Charts, diagrams, models, mounted photographs, and living objects were used, instead. Most of these exhibits were of seasonal character and thus were frequently changed as the months advanced. In general, an attempt was made to place only those things indoors that would have been in keeping upon the trails but would have been damaged by the rain and heat.

Nature needs no exhibitor to arrange her displays in the out-of-doors. However, she sometimes needs an interpreter to describe exhibits,

**Work upon
the Trails**

long since provided, that people may the better understand and appreciate her creations. The better nature is understood, the less she is molested. It was the continued function of the nature trails to interpret phases of nature by means of explanatory labels attached to natural objects in place.



Photograph by Ned. J. Burns

THE OPEN FIELD

Birds, flowers, grasses and soils were given prominence along this section of the Bear Mountain Nature Trails

Previous experience taught many things in regard to the all important problem of the writing of labels. In order to interest and inform

Labeling the visitor, it is needful to tell him salient facts in few words. It is a case not so much of what one would like to tell, but rather what the reader would like to be told. Many labels were rewritten as a direct result of studying the effect of their content upon the visitor. It was possible to listen to the remarks of various persons and to observe their reactions to certain labels. At the beginning of the trail, there are many chestnut oak trees. On one of these trees was a label stating the fact that "The chestnut oak leaf, though differing somewhat from the shape of the American chestnut leaf, resembles it. Thus the name Chestnut Oak." Several visitors, upon reading this label, expressed their

desire to know in just what respect the two leaves differed. The label did not tell enough of the story. It was replaced by another that, in addition to the wording, had two drawings, one of the American Chestnut leaf and one of the Chestnut Oak leaf, clearly showing the difference in form between the two. Another little sign just below the one with the drawing told the visitor that he might find the American Chestnut growing further on, along the trail. All of the labels give much more than mere names. In so far as was possible in the small space permitted, an effort was made to give the "why" and the "how" of the story.

Lengthy labels are seldom read except by persons who are especially interested; therefore whenever it was considered necessary to tell a story



Photograph by G. Clyde Fisher

GLACIAL STORY

Here a "windmill label" and a diagram of glacial action told of days when the country was covered with ice. Evidences of the glaciers presence are indicated nearby

Position of Labels of some length, two or more labels were employed in sequence to make the explanations more complete. Numbered labels were sometimes placed upon immovable "windmills," consisting of an upright and a horizontal stick in the form of a right-angled cross with labels upon each extremity. The center of the cross often served as a rest for a diagram or a map. In the instance of a "windmill" telling something of the glacial story, explanatory labels were placed upon the four arms of the cross, and a map, showing the extent of glacial progress in times gone by, was placed in the middle. It was seen that the visitors would stop often, but not for long at a time. For this reason, individual labels seldom exceeded twenty words in length. On an average, the labels were placed about twenty feet apart.

The position of a sign in reference to the object it describes is an important phase of label placing. When possible, labels are attached to the objects themselves. In the case of rocks, however, this is not always possible. The labels are hung as close to the specimens as the conditions will allow. Arrows pointing to the object are helpful, but wires or cord connecting the label and the specimen are better.

Labels that deal with poetry, or have for their content material that does not have direct reference to a given specimen, do not belong on trees. They should be placed upon posts or upon separate stands so that they will not be misleading. A tree label should describe its host and not say "This way to the swimming pool!"

Realizing that many people like to make some physical effort in order to learn something, and also knowing that hidden information is often more eagerly sought than information too easily gained, an effort was made to develop hidden labels along a short section of the return trail. These labels **Hidden Labels and Hidden Water** were wired to posts and trees along the route. They were so constructed that in order to read them the visitor found it necessary to raise a weighted cover. When the cover was lifted, the sign appeared beneath. The hidden label frames were sturdily made and were designed so that the covers could not be left open. A lead weight and a small round section of wood at the hinge top forced them closed when the cover was released.

When a large group of people were upon the trails, one could hear the little covers go "bang!", "bang!" as they clicked shut when dropped. It was an audible sign of interest that could be heard and understood at a distance.

At the end of the hidden label trail was one of the driest wells that

was ever dug. One day, while searching the ground surface with a crow-bar, preparatory to putting in a label post, it was discovered that the iron rod struck water. The spot was in the center of a wooded area near the service road to the museum building, far from any running water but not so distant from a small swamp. Further exploration with a shovel and a



BIRDS

Tripods, with colored bird pictures, were placed along the trail calling attention to the types of woodland frequented by various species

pickaxe revealed the fact that the water was there in considerable quantity. Thus it was decided that a well be dug in the soft clay soil to illustrate the story of ground moisture. After long hours of toil, during which the sociable clay had thoroughly worked its way into three suits of clothes on three people, bed rock was struck. The clay walls were lined with flat stones and a strong fence was built about the hole. So fast did the water rush in during the later part of the digging that it was necessary to bail constantly that the work might progress.

After the well was considered finished, signs and diagrams were made to explain the action of ground water, the position of the water table and the "holding" of water by tree-covered soils. These signs were duly placed, an iron rod, graduated in red and white inches, was driven into the

center of the well to indicate the rise and fall of the water table, and the out-of-door exhibit was left to itself. The next morning the well had about six inches of water in the bottom whereas there had been about three feet the evening before. Two days later, in spite of a heavy rain, the well was absolutely dry and has been ever since. Thus the story of drought told by the labels is very clearly illustrated at the present time. The hidden trail is equipped with a well with hidden water.

The building of a nature trail is something like the building of a fire. The more carefully the kindling is laid, the more readily will the wood above burn when once the match has been struck. In the instance of the nature trail, Nature, herself, has provided the kindling; it remains for the trail builder to use that kindling in such a way that he for whom the work has been done may apply the match of interest and see the flame of knowledge. The lack of fuel is never a worry. One cannot tag and label trees, flowers and rocks in the open as one would in a museum. The problem is much more subtle. It has a psychology all its own. Signs along the trail are invitations. They have for their aim the teaching of ideas as well as of facts. They are informal and say above all "you may" rather than "you must."



Photograph by Ned J. Burns

SNAKE CAGES

Celluloid covered the front of these elevated snake boxes. The cages were painted green in an effort to make them "blend" with the surroundings



**Correlation of
the Nature Trails
and the Trail-
side Museum**

of the museum is made upon many trail labels. The instance of "A Story of the Grasses" in an open field will serve to show the cross-reference system used. There were twelve labels in sequence along the trail telling about the grasses. The first label told something of the place of the grass family in the plant world. The succeeding signs described and named some eight different species of common grass. Following these tags were two labels referring definitely to the museum. One informed the reader that there was a book about grasses waiting for him at the Trailside Museum. The other invited the visitor to collect some grass seeds, return to the museum and examine his specimens under the microscope placed there for his use.

Many labels in the Trailside Museum invited the visitor to follow the trails and there discover objects of both seasonal and permanent interest. In fact, nearly every demonstration indoors related to things that could readily be found along the trails nearby. Thus it is that the trails and the museum become inter-relational and that the building is an information center for the projects carried on out-of-doors

While the Nature Trails might really be designed as single units in

**The Trailside
Museum**

the nature program,
the Trailside
Museum, as demon-

The opportunities for the public to destroy or mutilate objects along the trails were many. Little swinging signs are easily removed and signs firmly fixed are readily defaced. It was a satisfaction to observe that, no matter how great the temptation might have been, there was scarcely any damage done to labels or exhibits during the entire season.

The relation of the Trailside Museum to the Nature Trails is an important one. Frequent mention





"TOAD HOUSE"

The toads, kept in this little "house" were shown for one week and then released. Their exhibit days were short. New representatives were ever present to take their places



A TRAILSIDE RESIDENT

Though a transient guest, this little toad has preformed his part in telling facts about his family



GEOLOGY POINT

Anthony's Nose projects its rounded top against the sky line from the opposite side of the Hudson

strated above, is an essential factor in the development of the work done in the open.

The visitor approaches and comes upon the building after having walked along the trail for a distance of at least one quarter of a mile. The trail leads directly through the center of the museum and emerges upon the other side to continue on its way to a beautiful point overlooking the Hudson. The visitor, regardless of what trail he may select, must enter the building at one time or another during his walk.

The first thing to be seen, just inside the door of the Trailside Museum is a large blackboard with this legend: "Nature Events of the Week." The "events," listed below the title, include objects that are of current importance along the trails, such as the flowering of certain plants, or the habits of birds or animals during the given period of the month. One of the most interesting of the "events" of the season listed upon the blackboard was the appearance of hosts of seventeen year cicadas. This insect first came upon the scene in early June, and evidence of its presence was clearly visible for many weeks. The bulletin board at the beginning of the trail called attention to the advent of the locust and told the visitor that by following on to the museum more information could be gained. By advertising the appearance of the cicada in different places along the trail and by calling attention to its various activities, much interest was aroused and many letters were received asking for further knowledge about the subject. One letter from a woman in Idaho asked whether or not the insect crawled back into its discarded shell each night so as to keep its wings dry! Idaho is indeed a long way off!

The microscopical exhibit in the Trailside Museum seemed to have more appeal to the public than any other one thing in the building. In this working exhibit, one entire window table was used. Two inexpensive microscopes with mirror lights were placed about three feet apart. Within easy reach were two boxes of prepared slides of botanical and zoological subjects, together with a series of illustrated explanatory charts. A sign accompanying the equipment advised the visitor that he was welcome to go with a little enamel pail and a medicine dropper to a nearby pond, do his own collecting of microscopical pond life, return to the museum and examine and identify his find under the microscope. So popular was this exhibit that the two little pails suffered badly from chipped enamel. The microscopes were never injured, even though, on the Fourth of July, it was estimated that more than four hundred persons used them. This exhibit permitted the use of hands as well as of eyes and brain. In many instances, it taught familiarity with the microscopes



GEOLOGY STONE WALL.
This wall, had labeled specimens of rocks upon its top most layer



SHADED WOODLAND

The trail to Geology Point leads through a typically beautiful section of the Hudson Highlands.

and showed that such an instrument was not always the property of an inaccessible laboratory, but was rather a common apparatus that could be used by any interested person. Of the one hundred and twenty prepared slides only five were broken during six months of use.

It was interesting and often amusing to watch the actions of some fathers and sons who become engrossed with the microscopical exhibits. The process was something like the one that developed in many a home on Christmas morning when father discovered that the set of electric trains that he had given to little Herbert was so fascinating that he spent the greater part of the day playing with them himself while little Herbert looked wistfully on. In the instance of the microscopes, the father would indicate the instruments to his son on entering the building. He then would wander about looking at other exhibits until his son would cry, "Father look at this!" Then he would walk over to the table smiling, tolerantly, squint through the lense, and find that he was looking at something he had never seen before. From then on, the son was quite apt to take a decided back seat, as far as the microscopes were concerned, for his father would read the sign, visit the pond and bring back a pail of water, from which he would proceed to extract "water fleas" and other tiny creatures. Unless the father were particularly indulgent, the son would invariably have to be content until his parent had concluded with his observations.

Another exhibit that required the use of both hand and eye was the geological one. A large cabinet with sliding drawers was designed to contain a collection of local rocks and minerals. The cabinet had a hooked door with this sign, "Open this door and read the story of the rocks." When the door was opened, the visitor found another invitation to pull out the drawers and actually examine the specimens within. Each drawer and every specimen was numbered with black India ink superimposed upon white enamel patches. The specimens, loose in the drawer, were freshly broken that their individual characteristics might readily be seen. If the visitor was able to identify his specimen, well and good; if not, he had but to look at a chart on the inside of the door. This chart consisted of a list of all the specimens and was numbered to correspond with the drawer and rock markings. All this was but part of the story, for if the visitor were further interested, he was directed to an historical geology chart nearby and was informed that an investigation of the geology trail out-of-doors would be to his advantage, as would an examination of the rocks that were placed upon the specially built "geology



TURTLE PEN

This enclosure had a top that could easily be raised to enable people to handle the small turtles. The tripod told the story

stone wall." Several persons who had traced the "geology story" took it upon themselves to mail boxes of minerals to the museum that the collections might be more complete.

These two exhibits, the geological and the microscopical, are typical of others that are to be found in the Trailside Museum. It was an



Photograph by G. Clyde Fisher

A GEOLOGY SIGN

This collection of labels, rotates on a central post. A long story is divided into nine parts

inspiration to observe the public response and appreciation of them. The building, though comparatively small, usually had visitors who spent an hour or more there examining various displays.

It was with regret that the doors of the Trailside Museum were closed for the winter. Many individuals among the thousands of persons who found their way through these doors will no doubt return another season. That they may have learned something of nature and that they will give to others some of their information is the hope of those who were

responsible for the educational project. People who have become interested in nature usually have a faculty for awakening enthusiasm in others. The growing membership in the ranks of nature admirers is increasing steadily. It is a good sign for the nation at large. The Trailside Museum and the nature Trails at Bear Mountain have had their share in the gaining of new recruits.

NOTE:—A detailed description of the Bear Mountain Nature Trails is given in a pamphlet entitled, "Signs Along the Trail," by William H. Carr. This pamphlet was published in 1927 and may be obtained at the American Museum of Natural History.



"WHAT TO SEE"

These boys are reading instructions before starting off down the trail to the Trailside Museum





Relief model of the Bear Mountain Nature Trail Area made by Prentice B. Hill of the Geology Department of the American Museum of Natural History.

The numbers and letters are explained below

- | | | | | | |
|------------------------------------|------------------------------|-------------------|--------------|------------------|-----------------|
| 1. The Trailside Museum | 2. The Trails Start | 3. Workshop | 4. Cabin | 5. Geology Point | 6. Return Trail |
| 7. Historical Trail | 8. Ramp to Bear Mountain Inn | 9. Swimming Pool | 10. Bear Den | 11. Beaver Pond | |
| A. Bear Mountain Bridge Toll House | | B. Traffic Circle | | C. State Road | D. Boat Dock |

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